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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/118,234	07/17/1998	RUDI MAYER	10191/789	8795

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EXAMINER
TANG, KENNETH

ART UNIT	PAPER NUMBER
2127	

DATE MAILED: 12/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
·Office Action Summary	09/118,234	MAYER ET AL.
	Examiner	**Art Unit**	
	Kenneth Tang	2127	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-14</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-14</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)   4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5) ☐ Notice of Informal Patent Application (PTO-152)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>2,3</u> .   6) ☐ Other: .

U.S. Patent and Trademark Office
PTO-326 (Rev. 04-01)   Office Action Summary   Part of Paper No. 4

DETAILED ACTION

1.   Application Number 09/118,234 was filed on 7/17/98. Claims 1-14 are subject to examination.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the

rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2.   Claims 1, 3-7, and 9-10, 12-14 are rejected under 35 U.S.C. 102(b) as being unpatentable by Duffany

(US 5,070,453).

Referring to claims 1 and 10, Duffany teaches a control unit *("control unit", col. 9, lines 4-9, and Fig. 9,*

920) for a system and a method of operating that control unit, having a plurality of activatable modules for

generating information as a function of at least one of a plurality of states of the system *("processing devices",*

col. 9, lines 4-20, and Fig. 9, 901-1, 901-2, 901-3, 901-4), comprising:

-       a first storage device for storing information relating to a mutual interference of the modules *("array*

    data store 820", "data store", "stores the interference matrix data", col. 5, lines 25-42, and see Figure

    8);

-       a second storage device for storing information indicating which modules are activated *("program store*

    815", "contains a sequence of instructions", "control the signal processor 801, input-output interface

805 and data store 820 in the formation of an optimum allocation signal", col. 5, lines 25-42, and see

Figures 3 and 8);

- a scheduler for activating at least one of the modules and determining as a function of the information

stored in the first storage device and the information stored in the second storage device whether the

mutual interference occurs if an additional module is activated, wherein the scheduler prevents a

simultaneous activation of modules that interfere with each other *("task scheduling is performed in the*

control unit 920 in accordance with the invention to optimize the data transfers among processors 901-1

through 901-4", col. 9, lines 17-20, "In step 110, the interference array", "analyzed to determine the

correlations among the interference array elements", "predetermined criteria", "interference signal

array", col. 3, lines 64-68, "there exists at least one optimal solution", col. 3, lines 14-17, "at least one

data carrying channel", see claims 2, 3, 12 and 13, "and iterated to improve the allocation signal until

predetermined criteria indicating an optimum solution are met", col. 3, lines 64-68 through col. 4, lines

1-7, and see Figure 1). It is inherent that there is a "scheduler" that performs the scheduling.

Referring to claims 3 and 12, Duffany teaches wherein the scheduler prevents the simultaneous

activation of modules that interfere with each other by preventing an activation of the additional module

("conflicts or interferences", "correlations in the interference signal array (step 110)", "modifying the

allocation signal", "avoids interferences", col. 3, lines 41-63, and see flowchart of Fig. 1, and "task scheduling

is performed in the control unit 920 in accordance with the invention to optimize the data transfers among

processors 901-1 through 901-4", col. 9, lines 17-20).

Referring to claims 4 and 13, Duffany teaches wherein the scheduler prevents the simultaneous

activation of modules that interfere with each other by interrupting an activated module and activating the

additional module after the activated module is interrupted *("conflicts or interferences", "correlations in the*

interference signal array (step 110)", "modifying the allocation signal", "avoids interferences", col. 3, lines

41-63, and see flowchart of Fig. 1, and "task scheduling is performed in the control unit 920 in accordance

with the invention to optimize the data transfers among processors 901-1 through 901-4", col. 9, lines 17-20).

Duffany teaches that when there is an interference, thy system determines which task or module is optimal, and

that the best choice (which could be an additional module) is selected (col. 4, lines 27-30).

Referring to claim 5, Duffany teaches wherein the first storage device stores information regarding

which modules interfere with one another when they are simultaneously activated *("each row of the matrix of*

equation represents the interferences for a particular task", "data store 820", "stores the interference matrix

data", col. 5, lines 1-52, and see Figure 8).

Referring to claim 6, Duffany teaches wherein the first storage device stores information regarding

which states of the system correspond to which activated modules and which states of the system are interfered

with by which activated modules *("each row of the matrix of equation represents the interferences for a*

particular task", "data store 820", "stores the interference matrix data", col. 5, lines 1-52, and see Figure 8).

Each element of the matrix, defined by a particular row (i) and column (j), represents a particular state.

Referring to claims 7 and 14, Duffany teaches wherein each one of the modules and the scheduler

includes a program to be processed by a microprocessor. It is inherent that there are programs that are

processed in each module/"processing device" of 901-1 through 901-4 of Figure 9. Also "task scheduling is

performed in the control unit 920 in accordance with the invention to optimize the data transfers among

processors 901-1 through 901-4" *(col. 9, lines 17-20).*

Referring to claim 9, Duffany teaches wherein one of a set of functions appearing to a user as one unit and another set of functions being used to control a uniform function is divided into the modules and are managed separately by the scheduler *("assigning tasks", "allocation signal", col. 2, lines 23-36, and see the analogy of the "process of scheduling examinations for students", col. 3, lines 1-40, and task scheduling is performed in the control unit 920 in accordance with the invention to optimize the data transfers among processors 901-1 through 901-4", col. 9, lines 17-20).*

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 2, 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duffany (US 5,070,453) in view of Hosaka et al. (hereinafter Hosaka) (US 4,437,342).

Referring to claims 2 and 11, Duffany fails to explicitly teach wherein the system includes one of a motor vehicle, an engine, and a transmission. However, Hosaka discloses a diagnostic "engine control system" (see Figures 2 and 3) which consists of an "engine computer (E/C")", an "engine control unit 1000" *(col. 2, lines 23-49, and see Figure 1)*, and a transmission *("transmission", col. 2, lines 54-59, and col. 3, line 37)*, specifically for a motor vehicle *("driving", "vehicle", col. 4, lines 20-30).* It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the feature of a motor vehicle, and engine and a transmission in Hosaka to the existing system and method of Duffany for the reasons of increasing

functionality of the system by applying the control system to various other aspects. Hosaka teaches that "electronic concentrated engine control systems are widely used in automobiles" *(col. 1, lines 12-17)*. Furthermore, the references of Duffany and Hosaka are in the same field of endeavor, which deal with control systems.

Referring to claim 8, Duffany teaches wherein each one of the first storage device and the second storage device includes one of a plurality of tables and a plurality of matrices *("matrix signal A", "matrix signal B", col. 5, lines 56 through col 6, lines 1-59, and "program store 815" contains "a sequence of instruction corresponding to the flowchart of Fig. 3")*. In addition, the first storage device 820 is the "array data store", where an array is a 1 x N data table. Furthermore, it is well known to one of ordinary skill in the art that in computer systems, there are data tables that save the states of the sequence of instructions for processing. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a data table for each of the storage devices of Duffany for the reason of increasing the control of the system by having a data structure to store the values of the corresponding matrices.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth Tang whose telephone number is (703) 305-5334. The examiner can normally be reached on 9:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (703)305-8498. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be

directed to the receptionist whose telephone number is none.

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November 25, 2002